



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,836	11/14/2001	John Bottrill	UNITI-149XX	3032

23494 7590 08/13/2004

TEXAS INSTRUMENTS INCORPORATED  
P O BOX 655474, M/S 3999  
DALLAS, TX 75265

EXAMINER
----------

PHAM, TUAN

ART UNIT	PAPER NUMBER
----------	--------------

2643

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/990,836

**Applicant(s)**

BOTTRILL, JOHN

**Examiner**

TUAN A PHAM

**Art Unit**

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelly (U.S. Patent No.: 5,185,738) in view of Rovik (U.S. Patent No.: 5,406,623).

**Regarding claim 1**, Kelly teaches a circuit for switching a relay when an active AC voltage on one of the contacts of the relay is approximately zero volts, said circuit comprising (see figure 3):

a monitoring circuit that (i.e., zero crossing detector) receives said active AC voltage and outputs a phase-shifted voltage that crosses zero volts at predetermined times before said active AC voltage traverses zero volts (see figure 3, zero crossing detector 902, col.9, ln.1-65)(ring generator provide a AC voltage to zero crossing detector);

a pulse generating circuit that initiates a pulse when said phase-shifted voltage enters the voltage region (see col.18, ln.18-63); and

a relay control circuit that changes state at a leading edge of said pulse following a change in an input control signal, said relay control circuit connected to a control of said relay (see figure 3, SLIC 120, col.5, ln.13-32, col.9, ln.1-65).

It should be noticed that Kelly fails to clearly teach a predefined voltage region and terminates said pulse when said phase-shifted voltage exits said predefined voltage region. However, Rovik teaches such features (see col.1, ln.28-63, col.2, ln.1-65) for a purpose of define the ring signal on the telephone line.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of a predefined voltage region and terminates said pulse when said phase-shifted voltage exits said predefined voltage region, as taught by Rovik, into view of Kelly in order to reduce the transient voltage.

**Regarding claim 3**, Rovik further teaches the circuit wherein said predetermined times occur before a zero crossing from a negative voltage to positive voltage and before a zero crossing from a positive voltage to a negative voltage and said predetermined times are equal (see col.4, ln.24-65).

**Regarding claim 4**, Rovik further teaches the circuit wherein the predetermined time before a zero crossing from a negative voltage to a positive voltage is greater than a predetermined time before a zero crossing from a positive voltage to a negative voltage by a width of said pulse (see col.4, ln.24-65).

**Regarding claim 5**, Rovik further teaches the circuit wherein the predefined voltage region has limits of 0 volts and +3 volts (see figure 4, col.4, ln.24-65).

**Regarding claim 6**, Rovik further teaches the circuit wherein a leading edge of said pulse is approximately 2.5 msec before the zero crossing of said active AC voltage (see figure 4, col.4, ln.24-65).

***Allowable Subject Matter***

3. Claim 7 is allowed.
4. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Dalal et al. (U.S. Patent No. 6,115,469), Youngblood (U.S. Patent No. 5,636,274), Miller (U.S. Patent No. 4,631,361), and Wagner (U.S. Patent No. 4,396,805) are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s). These references are also concerned for supporting the system and method for providing ring trip detector for subscriber line interface circuit.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (703) 305-4987. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and

**IF PAPER HAS BEEN MISSED FROM THIS OFFICIAL ACTION PACKAGE, PLEASE  
CALL Customer Service at (703) 306-0377 FOR THE SUBSTITUTIONS OR COPIES.**

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Or faxed to: (703) 872-9306

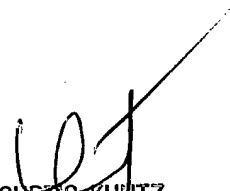
Art Unit: 2643

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist, tel. No. 703-305-4700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2643  
July 28, 2004  
Examiner

Tuan Pham

  
CURTIS KUITZ  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 2600